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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,990	08/17/2001	Wen-Shi Huang	0941-1282PUS1	8682
2292 7590 04/01/2010 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER				
PATEL, NIHIR B				
ART UNIT		PAPER NUMBER		
3772				
NOTIFICATION DATE		DELIVERY MODE		
04/01/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary**Application No.**

09/930,990

Applicant(s)

HUANG ET AL.

Examiner

NIHIR PATEL

Art Unit

3772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed on 11/23/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8, 10-23 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8, 10-23 and 25-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SEA-3)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 23rd, 2009 has been entered.

Response to Arguments

2. Applicant's arguments filed on November 23rd, 2009, with respect to amended claims 8, 14 and 19 have been fully considered and are persuasive. The previous rejection(s) of the office action dated July 22nd, 2009 has been withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims **8, 10-12, 14-17, 19-22 and 25-27** are rejected under 35 U.S.C. 102(e) as being anticipated by Lopatinsky et al. (US 6,659,169).

5. **As to claim 8**, Lopatinsky teaches an apparatus that comprises a centrifugal fan **105** (see **fig. 8; col. 8 lines 1-6**) including a rotary shaft (see **fig. 8**), a motor (**it is inherent that the fan contain a motor to provide the rotation**) and a plurality of blades **107** (see **fig. 8; col. 8 lines 1-10**); a heat sink **101** (see **fig. 8; col. 8 lines 1-10**), including a plurality of first cooling fins **109** (see **fig. 9; col. 8 lines 15-20**) and a plurality of second cooling fins **112** (**the needles define the second cooling fins**) located at the same plane as the first cooling fins, wherein an annular cavity (see **fig. 8**) is defined between the first cooling fins and the second cooling fins, and the second cooling fins include a lower portion (see **fig. 8; the bottom portion of the second cooling fins can be defined as the lower portion**); and a cover (see **fig. 8**) formed on the heat sink and the centrifugal fan **105**; wherein the motor (**if the fan is located below the cover it is inherent that the motor is also mounted below the cover**) for driving the rotary shaft is mounted below the cover (**a portion of the shaft is located below the cover and away from the heatsink**) and away from the heat sink, the blades are located in the cavity and extended toward a bottom of the heat sink (see **fig. 8**), and there is a distance between the rotary shaft and the second cooling fins so that the entire rotary shaft is located above the lower portion of the second cooling fins (see **fig. 8**), and the rotary shaft is positioned away from the lower portion of the second cooling fins (see **fig. 8**).
6. **As to claims 10, 15 and 20**, Lopatinsky teaches an apparatus wherein the cover serves as an air seal to keep it airtight (see **fig. 8; the cover is designed to allow air in see the arrows but prevent the air from escaping as the fan is rotating**).
7. **As to claims 11, 16 and 21**, Lopatinsky teaches an apparatus wherein the annular cavity matches the centrifugal fan (see **figs. 8 and 9**).

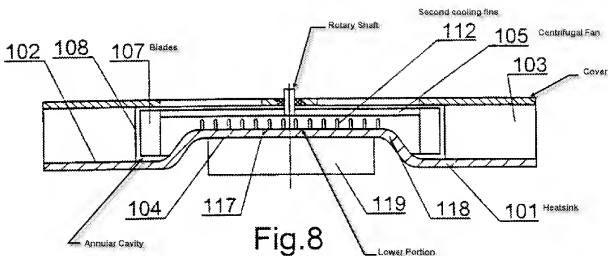
8. **As to claims 12, 17 and 22**, Lopatinsky teaches an apparatus wherein the cooling fins are distributed under and around a region extending from a central region of the centrifugal fan to a periphery of the centrifugal fan (see figures 10 and 12; see column 9 lines 40-50 and 65-67).

9. **As to claim 14**, Lopatinsky teaches an apparatus that comprises a heat sink 101 (see fig. 8; col. 8 lines 1-10), including a plurality of first cooling fins 109 (see fig. 9; col. 8 lines 15-20) and a plurality of second cooling fins 112 (the needles define the second cooling fins) located at the same plane as the first cooling fins, wherein a cavity (see fig. 8) is defined between the first cooling fins and the second cooling fins, and the second cooling fins include a lower portion (see fig. 8; the bottom portion of the second cooling fins can be defined as the lower portion); a cover (see fig. 8) connected to the heat sink and having corners directly contacted to the first cooling fins (see fig. 9); and a centrifugal fan 105 (see fig. 8; col. 8 lines 1-6) including a rotary shaft (see fig. 8), a motor (it is inherent that the fan contain a motor to provide the rotation) and a plurality of blades 107 (see fig. 8; col. 8 lines 1-10) disposed around the hub (see figs. 8 and 9), wherein the motor for driving the rotary shaft is mounted below the cover (if the fan is located below the cover it is inherent that the motor is also mounted below the cover) and away from the heat sink (see figs. 8 and 9), the blades are located in the cavity and extended beyond a top surface of the heat sink (see figs. 8 and 9), the entire rotary shaft is located above the lower portion of the second cooling fins (see fig. 8), and the rotary shaft is positioned toward the cover to be away from the lower portion of the second cooling fins (see fig. 8).

10. **As to claim 19**, Lopatinsky teaches an apparatus that comprises a heat sink 101 (see fig. 8; col. 8 lines 1-10), including a plurality of first cooling fins 109 (see fig. 9; col. 8 lines 15-20) and a plurality of second cooling fins 112 (the needles define the second cooling fins) located

at the same plane as the first cooling fins, wherein a cavity (**see fig. 8**) is defined between the first cooling fins and the second cooling fins, and the second cooling fins include a lower portion (**see fig. 8; the bottom portion of the second cooling fins can be defined as the lower portion**); a centrifugal fan **105** (**see fig. 8; col. 8 lines 1-6**) having an axial direction and a radial direction and including a rotary shaft (**see fig. 8**), a motor (**it is inherent that the fan contain a motor to provide the rotation**) and a plurality of blades **107** (**see fig. 8; col. 8 lines 1-10**); and a cover (**see fig. 8**), including a plurality of inlets (**see fig. 8**), mounted onto said heat sink and said centrifugal fan, wherein air from ambient is flowed in the axial direction of the centrifugal fan into the heat sink from the inlets of the cover (**see fig. 8**), and is flowed in the radial directions of the centrifugal fan and out of the heat sink; wherein the motor for driving the rotary shaft is mounted below the cover (**if the fan is located below the cover it is inherent that the motor is also mounted below the cover**) and away from the heat sink, the blades are located in the cavity (**see fig. 8**), and extended toward a bottom of the heat sink, and there is a distance between the rotary shaft and the second cooling fins so that the entire rotary shaft is located above the lower portion (**see fig. 8**) of the second cooling fins, and the rotary shaft is positioned away from the lower portion of the second cooling fins (**see fig. 8**).

11. **As to claims 25, 26 and 27, Lopatinsky teaches an apparatus wherein the motor is between the cover and the second cooling fins (see fig. 8; the device is designed in such a way for example the blades and shaft are located within the cover indicating that it is inherent that the motor is also located within the cover and it is located above the second cooling fins since the shaft that is connected to the motor is located above the second cooling fins).**



Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims **13, 18 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lopatinsky et al. (US 6,659,169) in view of Itoh et al. (US 4,926,242).

15. **As to claims 13, 18 and 23**, Lopatinsky substantially discloses the claimed invention, see rejection of claims 8, 14 and 19 above, but does not disclose a heat sink that is made of a material chosen from the group consisting of aluminum, aluminum alloy, copper, copper alloy and the combination thereof. Itoh discloses an apparatus that does provide a heat sink that is made of a material chosen from the group consisting of aluminum, aluminum alloy, copper, copper alloy and the combination thereof (**see col. 2 lines 3-15**). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lopatinsky's invention by designing a heat sink that is made from the group consisting of aluminum, aluminum alloy, copper, copper alloy and the combination thereof in order to provide excellent thermal conductivity.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIHIR PATEL whose telephone number is (571)272-4803. The examiner can normally be reached on 7:30 to 4:30 every other Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia Bianco can be reached on (571) 272-4940. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nihir Patel/
Examiner, Art Unit 3772

/Patricia Bianco/

Supervisory Patent Examiner, Art Unit 3772